

## Montana Board of Oil and Gas Conservation Environmental Assessment

**Operator:** Devon Energy Production Company, L.P.

**Well Name/Number:** Sands 31-4A

**Location:** NW NW Lot 1 Section 31 T32N R15E

**County:** Hill, MT; **Field (or Wildcat)** Tiger Ridge

### Air Quality

(possible concerns)

Long drilling time: No, 3 to 4 days drilling time.

Unusually deep drilling (high horsepower rig): No, small single derrick drilling rig to drill to 2500' TD.

Possible H<sub>2</sub>S gas production: No H<sub>2</sub>S gas, formation at TD.

In/near Class I air quality area: No, Class I air quality area.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: \_\_\_\_\_

Comments: No special concerns – using small rig to drill to 2500' TD.

### Water Quality

(possible concerns)

Salt/oil based mud: No, freshwater, and freshwater mud system to be used only.

High water table: No high water table anticipated in this area.

Surface drainage leads to live water: No, closest drainage is about 1 mile to the northeast from this location.

Water well contamination: None, closest water wells are about 1/2 of a mile to the south, 3/4 of a mile to the east and 1 mile to the northeast. Depth of these water wells range from 143' to 172'. Surface hole will be drilled with freshwater and freshwater mud, steel surface casing will be set to 180' and cemented to surface from 180'. Well will be drilled with freshwater and freshwater drilling fluids. If productive 4 1/2" casing will be run and cemented to surface to protect ground waters.

Porous/permeable soils: No, sandy bentonitic soils.

Class I stream drainage: No, Class I stream drainages.

Mitigation:

☐ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: \_\_\_\_\_

Comments: 180' surface casing well below freshwater zones in nearby water wells. If productive 4 1/2" casing will be cemented to surface. Adequate surface casing and operational BOP equipment will be set and used.

### Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No stream crossings required, only crossing ephemeral drainages.

High erosion potential : No, small cut, up to 1.0' and no fill, up to 0.0', required.

Loss of soil productivity: None, location to be restored after drilling well, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, small well site 250' X 250'.

Damage to improvements: Slight, surface use appears to be cultivated surface lands.

Conflict with existing land use/values: Slight.

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other \_\_\_\_\_

Comments: Access will be from existing county gravel road. About 1000' of new access will be built to access this location from an existing county road. Drilling fluids will be freshwater and freshwater mud system. Cutting will be buried in the unlined pits. Drilling fluids will be offsite disposed of in a stock pond for sealant, with surface owner approval. Pits will be allowed to dry before being backfilled. No special concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 3/4 of a mile to the south and about 3/4 of a mile to the east from this drilling location.

Possibility of H2S: None anticipated.

Size of rig/length of drilling time: Small single derrick drilling rig. Short drilling time 3 to 4 days drilling.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: \_\_\_\_\_

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems.

### Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Black-footed Ferret (Listed in Hill County by US Fish & Wildlife website). Candidate species listed is the Greater Sage Grouse.

Mitigation:

☐ Avoidance (topographic tolerance/exception)

☐ Other agency review (DFWP, federal agencies, DSL)

☐ Fencing of pits, drillsite

☐ Other: \_\_\_\_\_

Comments: Private cultivated surface lands. No concerns.

### Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites None identified

Mitigation

\_\_\_ avoidance (topographic tolerance, location exception)

\_\_\_ other agency review (SHPO, DSL, federal agencies)

\_\_\_ Other: \_\_\_\_\_

Comments: Private cultivated surface lands. No concerns

**Social/Economic**

(possible concerns)

\_\_\_ Substantial effect on tax base

\_\_\_ Create demand for new governmental services

\_\_\_ Population increase or relocation

Comments: No concerns at this time, development well within the Tiger Ridge Gas Field delineation.

**Remarks or Special Concerns for this site**

Well is a 2500' TD Eagle Formation test northwest side of Bear Paw Mountains.

**Summary: Evaluation of Impacts and Cumulative effects**

No long term impacts expected. Some short term impacts will occur, but can be mitigated in a short time.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): \s\ Steven Sasaki \_\_\_\_\_

(title:) Chief Field Inspector

Date: May 24, 2010

Other Persons Contacted:

\_\_\_\_\_  
Montana Bureau of Mines and Geology, Groundwater Information Center website

\_\_\_\_\_  
(Name and Agency)

Hill County water wells

(subject discussed)

May 24, 2010

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Hill County

(subject discussed)

May 24, 2010

(date)

If location was inspected before permit approval:

Inspection date: \_\_\_\_\_

Inspector: \_\_\_\_\_

Others present during inspection: \_\_\_\_\_